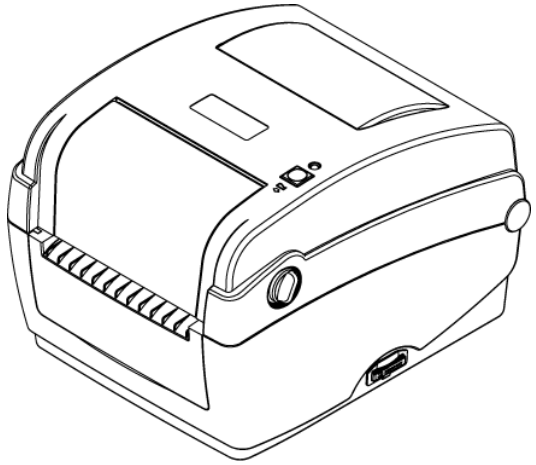
HellermannTyton

TT230SM THERMAL TRANSFER PRINTER

USER'S MANUAL



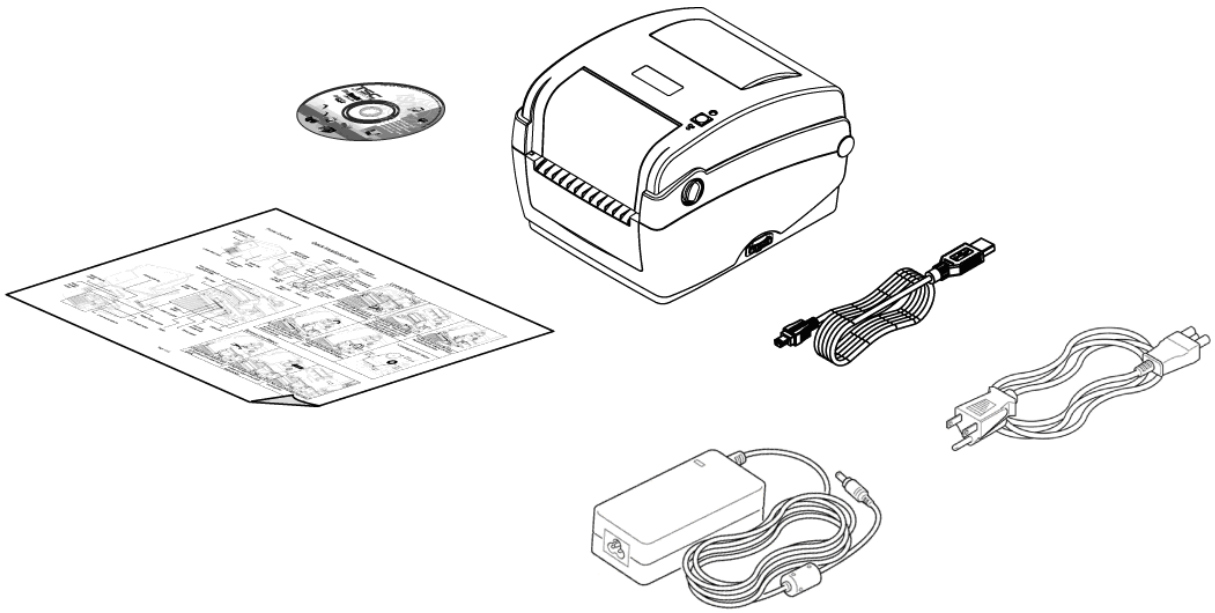
Operations Overview

Unpacking and Inspection

This printer has been specially packaged to withstand damage during shipping.
Please carefully inspect the packaging and printer upon receiving the bar code printer.
Please retain the packaging materials in case you need to reship the printer.

Unpacking the printer, the following items are included in the carton.

- One printer unit
- One Windows USB Key Drive for Drivers / Manuals.
- One quick installation guide
- One power cord
- One auto switching power supply
- One USB interface cable



If any parts are missing, please contact HellermannTyton Support.

Printer Overview

Front View

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1. Ribbon access cover
2. Top cover open lever
3. Media view window
4. LED indicator
5. Feed button
6. SD card socket

Interior view

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1. Ribbon rewind hub
2. Ribbon rewind gear
3. Gap sensor (receiver)
4. Media holder
5. Media holder lock switch
6. Gap sensor (transmitter)
7. Printhead
8. Ribbon supply hub
9. Top cover support
10. Media guide adjustment knob
11. Black mark sensor
12. Platen roller

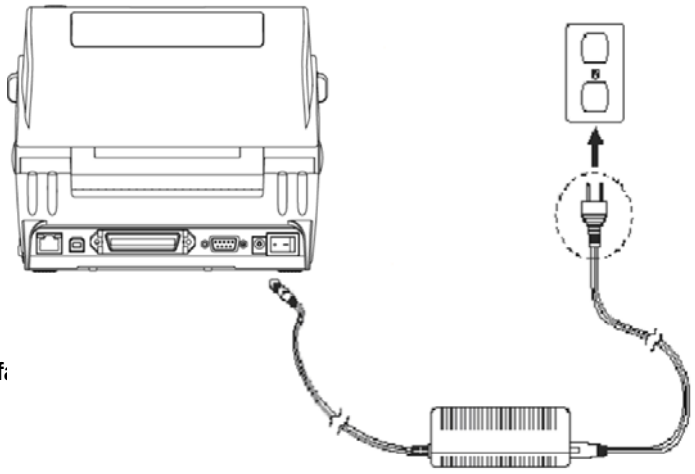
Rear View

1. Ethernet interface
2. USB interface
3. Centronics interface
4. RS-232C interface
5. Power jack socket
6. Power switch
7. Fan-fold paper entrance chute

Setup

Setting Up the Printer

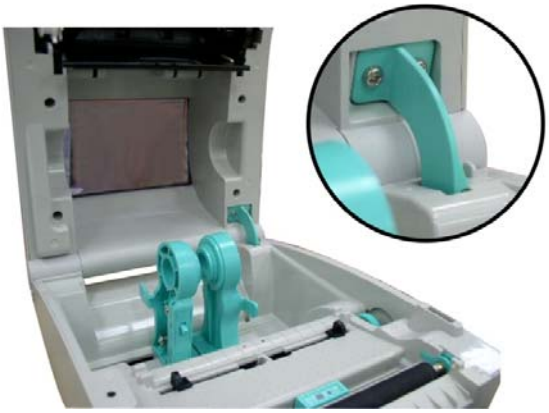
1. Place the printer on a flat, secure surface.
2. Make sure the power switch is off.
3. Connect the printer to the computer with the provided USB cable.
4. Plug the power cord into the AC power cord socket at the rear of the printer, and then plug the power cord into a properly grounded power outlet.



Open / Close the Top Cover

1. Open the printer top cover by pulling the tabs located on each side towards the front of the printer, then lift the top cover to the maximum open angle.

2. A top cover support at the rear of the printer will engage with lower inner cover to hold the printer top cover open.



3. Hold the top cover and press the top cover support to disengage the top cover support with lower inner cover. Gently close the top cover.

Loading the Ribbon

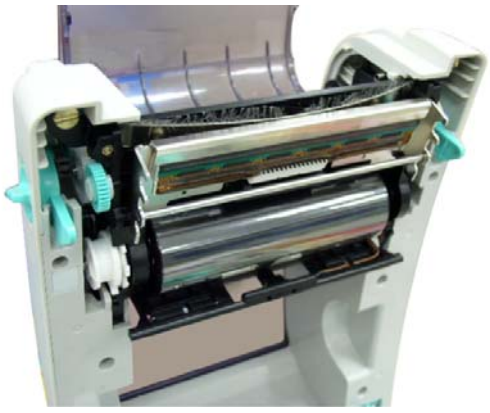
1. Open the printer's top cover by pulling the top cover open levers located on each side of the printer and lifting the top cover to the maximum open angle.
2. Open the ribbon access cover.

Note:

1. In normal printing mode, ribbon access cover can be opened while opens the top cover. Ribbon access cover can be closed while top cover is open or close.

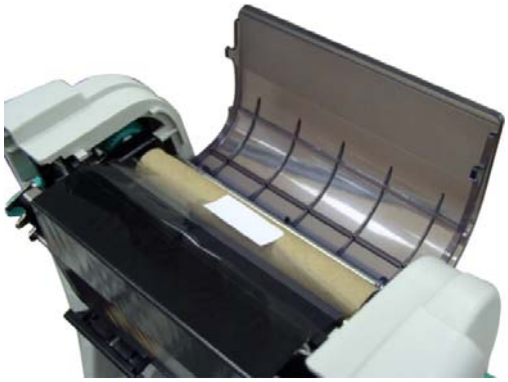
2. In peeler and cutter mode, please open the top cover then the ribbon access cover can be opened or closed.

3. Insert the ribbon right side onto the supply hub. Align the notches on the left side and mount onto the spokes.



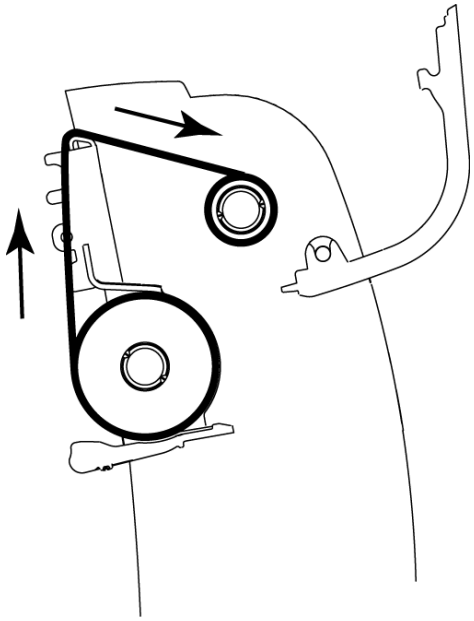
4. Insert the paper core right side onto the rewind hub. Align the notches on the left side and mount onto the spokes.

5. Stick the ribbon onto the ribbon rewind paper core.



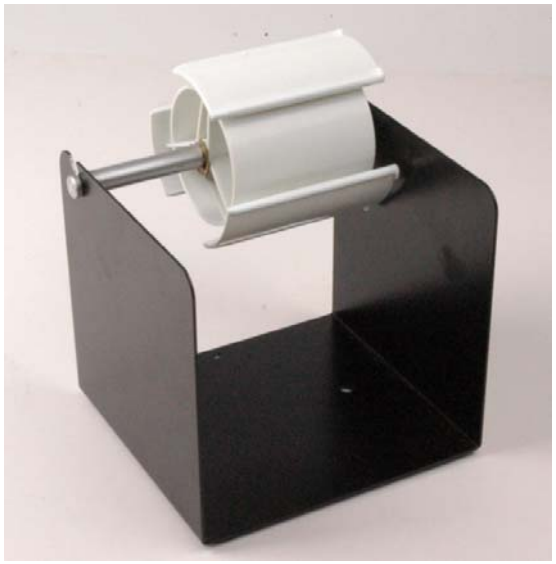
6. Turn the ribbon rewind gear until the ribbon plastic leader is thoroughly wound and the black section of the ribbon covers the print head. Close the ribbon access cover and the top cover.

- **Loading Path for Ribbon**



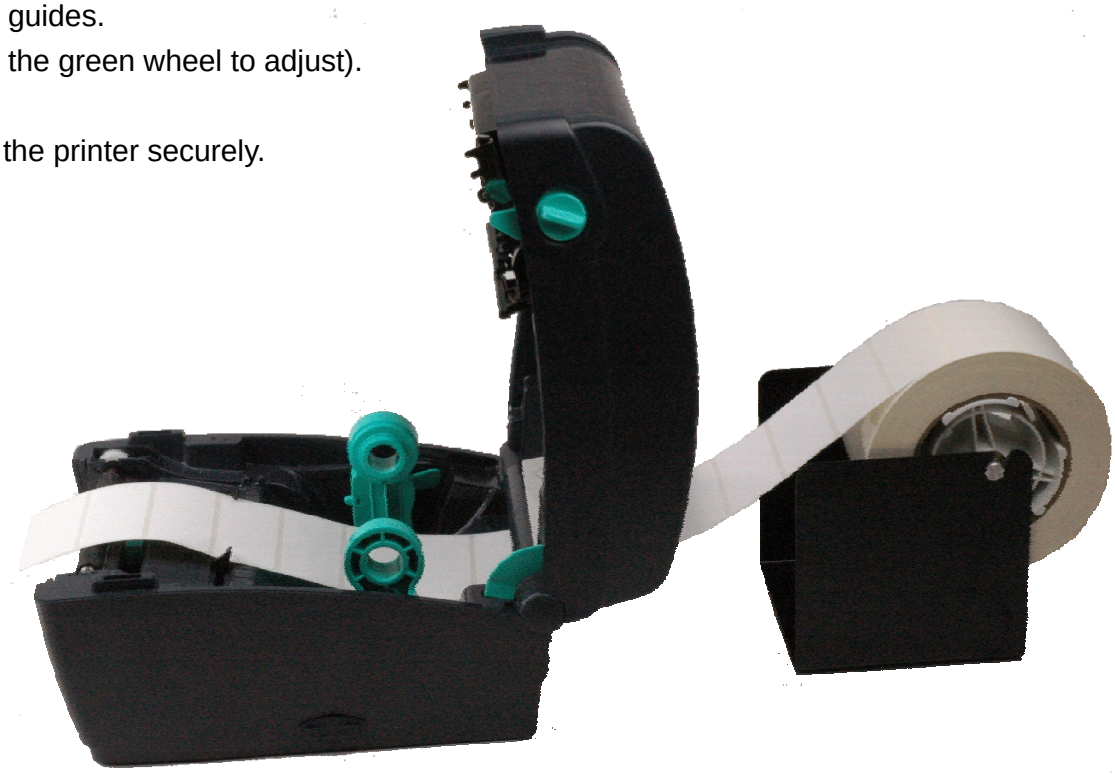
Loading Labels

For optimal printing, please use the HellermannTyton Caddy 5.0, article number 556-03022.



To load labels, open the TT230SM and separate the green hub guides and lock them into place on the sides. Then feed the labels from the back of the printer through the black media guides.
(using the green wheel to adjust).

Close the printer securely.

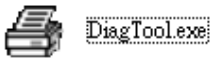


Diagnostic Tool

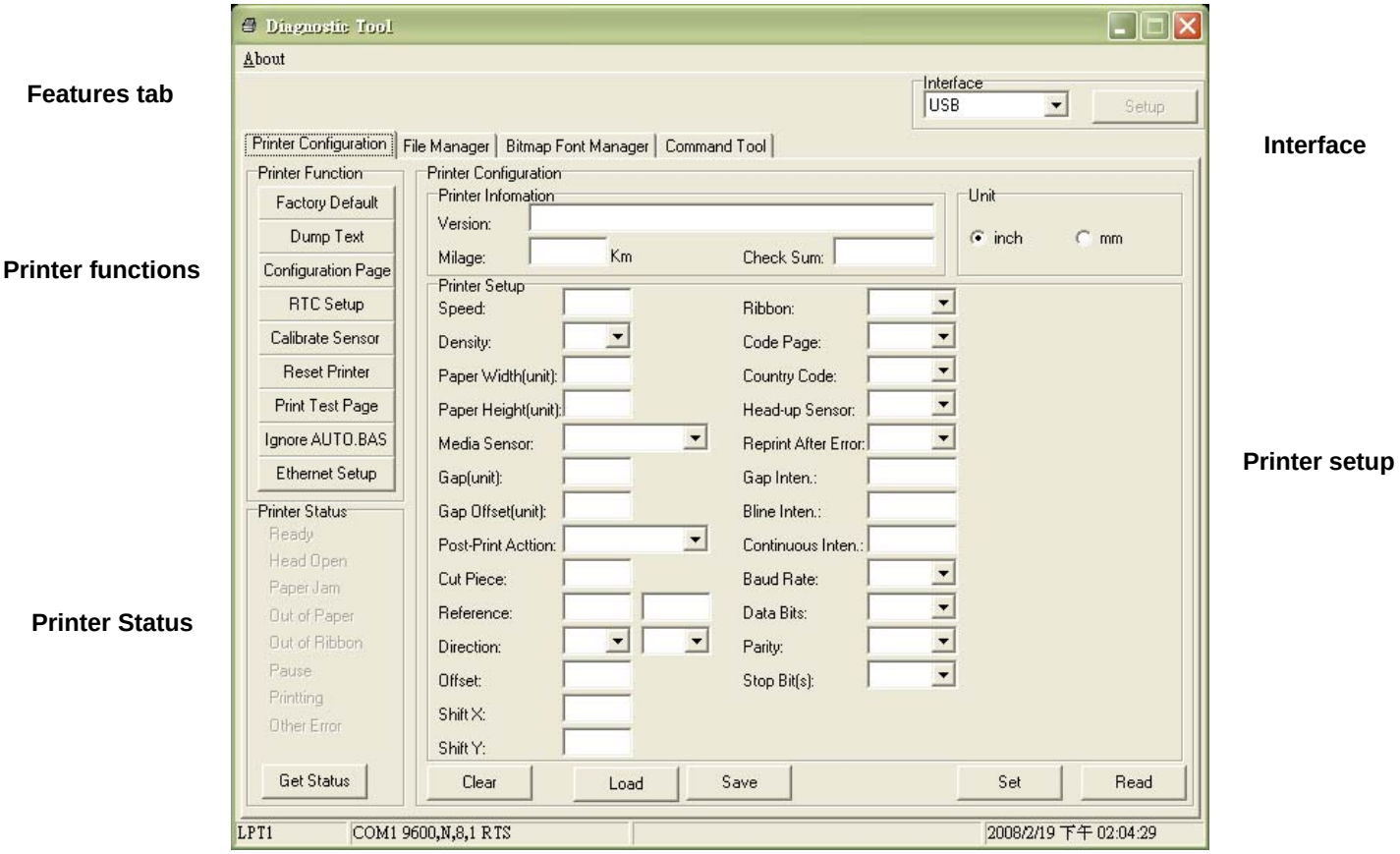
The Diagnostic Utility is a toolbox that allows users to explore the printer's settings and status; change printer settings; download graphics, fonts, and firmware; create printer bitmap fonts; and to send additional commands to the printer. Using this convenient tool, you can explore the printer status and settings and troubleshoot the printer.

Note: This utility works with printer firmware V6.00 and later versions.

Start the Diagnostic Tool

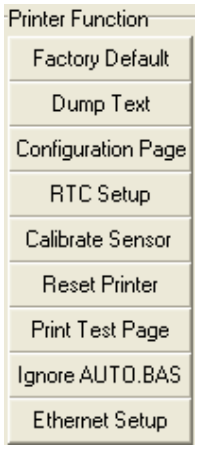
1. Double click on the Diagnostic tool icon 

to start the software.
2. There are four features (Printer Configuration, File Manager, Bitmap Font Manager, Command Tool) included in the Diagnostic utility.



Printer Function (Calibrate sensor, Ethernet setup, RTC setup……)

1. Select the PC interface connected with bar code printer.
2. Click the “Function” button to setting.
3. The detail functions in the Printer Function Group are listed as below.



Function	Description
Factory Default	Initialize the printer and restore the settings to factory default.
Dump Text	To activate the printer dump mode.
Configuration Page	Print printer configuration.
RTC Setup	Synchronize printer Real Time Clock with PC.
Calibrate Sensor	Calibrate the sensor specified in the Printer Setup group media sensor field.
Reset Printer	Reboot the printer.
Print Test Page	Print a test page.
Ignore AUTO.BAS	Ignore the downloaded AUTO.BAS program.
Ethernet Setup	Setup the IP address, subnet mask, gateway for the on board Ethernet.

Note:

For more information about Diagnostic Tool, please refer to the diagnostic utility quick start guide in the CD disk \ Utilities directory.

LED and Button Functions

This printer has one button and one three-color LED indicator. By indicating the LED with different color and pressing the button, printer can feed labels, pause the printing job, select and calibrate the media sensor, print printer self-test report, reset printer to defaults (initialization). Please refer to the button operation below for different functions.

LED indicator

LED Color	Description
Green/ Solid	This illuminates that the power is on and the device is ready to use.
Green/ Flash	This illuminates that the system is downloading data from PC to memory or the printer is paused.
Amber	This illuminates that the system is clearing data from printer.
Red / Solid	This illuminates printer head open, cutter error.
Red / Flash	This illuminates a printing error, such as head open, paper empty, paper jam, ribbon empty, or memory error etc.

Regular button function

1. Feed labels

When the printer is ready, press the button to feed one label to the beginning of next label.

2. Pause the printing job

When the printer is printing, press the button to pause a print job. When the printer is paused the LED will blink green. Press the button again to continue the printing job.

Power on utilities

There are six power-on utilities to set up and test printer hardware. These utilities are activated by pressing FEED button then turning on the printer power simultaneously and release the button at different color of LED.

Please follow the steps below for different power-on utilities.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED indicates with different color for different functions.

Power on utilities	**The LED color will be changed as following pattern:**						
LED color / ***Functions***	Amber	Red (5 blinks)	Amber (5 blinks)	Green (5 blinks)	Green/Amber (5 blinks)	Red/Amber (5 blinks)	Solid green
1. Ribbon Sensor Calibration and Gap / black mark sensor calibration		*Release*					
2. Gap / black mark sensor calibration, Self-test and enter dump mode			*Release*				
3. Printer initialization				*Release*			
4. Set black mark sensor as media sensor and calibrate the black mark sensor					*Release*		
5. Set gap sensor as media sensor and calibrate the gap sensor						*Release*	
6. Skip AUTO.BAS							*Release*

Ribbon and Gap/Black Mark Sensor Calibration

Gap/black mark sensor sensitivity should be calibrated at the following conditions:

1. A brand new printer
2. Change label stock.
3. Printer initialization.

Please follow the steps below to calibrate the ribbon and gap/black mark sensor.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3 Release the button when LED becomes **red** and blinking. (Any red will do during the 5 blinks).

- It will calibrate the ribbon sensor and gap/black mark sensor sensitivity.
- The LED color will be changed as following order：

  Amber → **red (5 blinks)** → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → solid green

Note:

Please select gap or black mark sensor by sending GAP or BLINE command to printer prior to calibrate the sensor.

For more information about GAP and BLINE command, please refer to TSPL2 programming manual.

Gap/Black Mark Calibration, Self-test and Dump Mode

While calibrate the gap/black mark sensor, printer will measure the label length, print the internal configuration (self-test) on label and then enter the dump mode. To calibrate gap or black mark sensor, depends on the sensor setting in the last print job.
Please follow the steps below to calibrate the sensor.

1.Turn off the power switch.

2. Hold on the button then turn on the power switch.

3. Release the button when LED becomes **amber** and blinking. (Any amber will do during the 5 blinks)

- The LED color will be changed as following order.
  Amber → red (5 blinks) → **amber (5 blinks)** → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → solid green

4. It calibrates the sensor and measures the label length and prints internal settings then enter the dump mode.

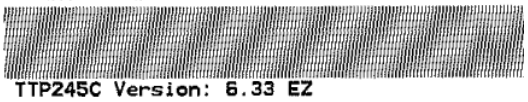
Note:

Please select gap or black mark sensor by Diagnostic Tool or by GAP or BLINE command prior to calibrate the sensor.

For more information about GAP and BLINE command, please refer to TSPL2 programming manual.

Self-test

Printer will print the printer configuration after gap/black mark sensor calibration. Self-test printout can be used to check if there is any dot damage on the heater element, printer configurations and available memory space.

PRINTER INFO. 	Print head test pattern
TTP245C Version: 6.33 EZ	Printer model name & Main board firmware version
MILAGE(m): 272	Printed mileage
CHECKSUM: 0594C7F2	Main board firmware checksum
SERIAL PORT: 9600,N,8,1	Serial port setting
CODE PAGE: 850	Code page
COUNTRY CODE: 001	Country code
SPEED: 2 INCH	Print speed
DENSITY: 12	Print darkness
SIZE: 4.00 , 2.50	Label size (width, height)
GAP: 0.00 , 0.00	Gap size (vertical gap, offset)
TRANSPARENCE: 16	Sensor sensitivity
MAC ADDRESS: 00-1B-82-FF-01-98 DHCP ENABLED: YES IP ADDRESS: 10.0.2.88 SUBNET MASK: 255.255.255.0 DEFAULT GATEWAY: 10.0.2.254 ********** FILE LIST: DRAM FILE: 0 FILE(S) FLASH FILE: 0 FILE(S) PHYSICAL DRAM: 8192 KBYTES AVAILABLE DRAM: 256 KBYTES FREE PHYSICAL FLASH: 2048 KBYTES AVAILABLE FLASH: 1088 KBYTES FREE END OF FILE LIST **********	File management information

■ Dump mode

Printer will enter dump mode after printing printer configuration. In the dump mode, all characters will be printed in 2 columns as following. The left side characters are received from your system and right side data are the corresponding hexadecimal value of the characters. It allows users or engineers to verify and debug the program.

ASCII Data

```
SPEED 2.0    53 50 45 45 44 20 32 2E 30 0D
 DENSITY 8   0A 44 45 4E 53 49 54 59 20 38
  SET PEEL   0D 0A 53 45 54 20 50 45 45 4C
 OFF  DIRE   20 4F 46 46 0D 0A 44 49 52 45
CTION 0 G    43 54 49 4F 4E 20 30 0D 0A 47
AP 3.00 mm   41 50 20 33 2E 30 30 20 6D 6D
,0.00 mm     2C 30 2E 30 30 20 6D 6D 0D 0A
REFERENCE    52 45 46 45 52 45 4E 43 45 20
0,0  SET C   30 2C 30 0D 0A 53 45 54 20 43
UTTER OFF    55 54 54 45 52 20 4F 46 46 0D
 SIZE 100.   0A 53 49 5A 45 20 31 30 30 2E
02 mm,65.0   30 32 20 6D 6D 2C 36 35 2E 30
4 mm  CLS    34 20 6D 6D 0D 0A 43 4C 53 0D
 BARCODE 1   0A 42 41 52 43 4F 44 45 20 31
44,149,"39   34 34 2C 31 34 39 2C 22 33 39
",120,1,0,   22 2C 31 32 30 2C 31 2C 30 2C
2,8,"57114   32 2C 36 2C 22 35 37 31 31 34
38T"  PRIN   33 38 54 22 0D 0A 50 52 49 4E
T 1,1  SPE   54 20 31 2C 31 0D 0A 53 50 45
ED 2.0  DE   45 44 20 32 2E 30 0D 0A 44 45
NSITY 8  S   4E 53 49 54 59 20 38 0D 0A 53

ET PEEL OF   45 54 20 50 45 45 4C 20 4F 46
F  DIRECTI   46 0D 0A 44 49 52 45 43 54 49
ON 0  GAP    4F 4E 20 30 0D 0A 47 41 50 20
3.00 mm,0.   33 2E 30 30 20 6D 6D 2C 30 2E
00 mm  REF   30 30 20 6D 6D 0D 0A 52 45 46
ERENCE 0,0   45 52 45 4E 43 45 20 30 2C 30
  SET CUTT   0D 0A 53 45 54 20 43 55 54 54
ER OFF  SI   45 52 20 4F 46 46 0D 0A 53 49
ZE 100,02    5A 45 20 31 30 30 2E 30 32 20
mm,65.04 m   6D 6D 2C 36 35 2E 30 34 20 6D
m  CLS  BA   6D 0D 0A 43 4C 53 0D 0A 42 41
RCODE 144,   52 43 4F 44 45 20 31 34 34 2C
149,"39",1   31 34 39 2C 22 33 39 22 2C 31
20,1,0,2.6   32 30 2C 31 2C 30 2C 32 2C 36
,"5711438T   2C 22 35 37 31 31 34 33 38 54
"  PRINT 1   22 0D 0A 50 52 49 4E 54 20 31
,1           2C 31 0D 0A
```

Hex decimal data related to left column of ASCII data

Note:

1. Dump mode requires 4” wide paper width.

2. Turn off / on the power to resume printer for normal printing.

3. Press FEED button to back to the previous menu.

Printer Initialization

Printer initialization is used to clear DRAM and restore printer settings to defaults. The only one exception is ribbon sensitivity, which will note be restored to default.
Printer initialization is activated by the following procedures.

1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED turns **green** after 5 amber blinks. (Any green will do during the 5 blinks).

- The LED color will be changed as following:
  Amber → red (5 blinks) → amber (5 blinks) → **green (5 blinks)** → green/amber (5 blinks) → red/amber (5 blinks) → solid green

Printer configuration will be restore to defaults as below after initialization.

Parameter	Default setting
Speed	127 mm/sec (5 ips) (203DPI) 76 mm/sec (3 ips) (300DPI)
Density	8
Label Width	4” (101.5 mm)
Label Height	4” (101.5 mm)
Sensor Type	Gap sensor
Gap Setting	0.12” (3.0 mm)
Print Direction	0
Reference Point	0,0 (upper left corner)
Offset	0
Tear Mode	On
Peel off Mode	Off
Cutter Mode	Off
Serial Port Settings	9600 bps, none parity, 8 data bits, 1 stop bit
Code Page	850
Country Code	001
Clear Flash Memory	No
IP Address	DHCP

Set Black Mark Sensor as Media Sensor and Calibrate the Black Mark Sensor

Please follow the steps as below.
1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED turns **green/amber** after 5 green blinks. (Any green/amber will do during the 5 blinks).

- The LED color will be changed as following:
  Amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → **green/amber (5 blinks)** → red/amber (5 blinks) → solid green

Set Gap Sensor as Media Sensor and Calibrate the Gap Sensor

Please follow the steps as below.
1. Turn off the power switch.
2. Hold on the button then turn on the power switch.
3. Release the button when LED turns **red/amber** after 5 green/amber blinks. (Any red/amber will do during the 5 blinks).

- The LED color will be changed as following:
  Amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → **red/amber (5 blinks)** → solid green

Skip AUTO.BAS

TSPL2 programming language allows user to download an auto execution file to flash memory. Printer will run the AUTO.BAS program immediately when turning on printer power. The AUTO.BAS program can be interrupted without running the program by the power-on utility.

Please follow the procedures below to skip an AUTO.BAS program.
1. Turn off printer power.
2. Press the FEED button and then turn on power.
3. Release the FEED button when LED becomes **solid green**.
   - The LED color will be changed as following:
     Amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → **solid green**
4. Printer will be interrupted to run the AUTO.BAS program.

Troubleshooting

The following guide lists the most common problems that may be encountered when operating this bar code printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance.

LED Status

This section lists the common problems that according to the LED status and other problems you may encounter when operating the printer. Also, it provides solutions.

LED Status / Color	Printer Status	Possible Cause	Recovery Procedure
OFF	No response	No power	* Turn on the power switch. * Check if the green LED is lit on power supply. If it is not lit on, power supply is broken. * Check both power connections from the power cord to the power supply and from the power supply to the printer power jack if they are connected securely.
Solid Green	ON	The printer is ready to use	* No action necessary.
Green with blinking	Pause	The printer is paused	* Press the FEED button to resume for printing.
Red with blinking	Error	The out of label or ribbon or the printer setting is not correct	1. Out of label or ribbon * Load a roll of label and follow the instructions in loading the media then press the FEED button to resume for printing. * Load a roll of ribbon and follow the instructions in loading the ribbon then press the FEED button to resume for printing. 2. Printer setting is not correct * Initialize the printer by instructions in “Power on Utility” or “Diagnostic Tool”.

Note:

Printer status can be easily shown on the Diagnostic Tool. For more information about the Diagnostic Tool, please refer to the instruction in the software CD disk.

Print Quality

Problem	Possible Cause	Recovery Procedure
Not Printing	Check if interface cable is well connected to the interface connector.	Re-connect cable to interface.
	The serial port cable pin configuration is not pin to pin connected.	Please replace the cable with pin to pin connected.
	The serial port setting is not consistent between host and printer.	Please reset the serial port setting.
	The port specified in the Windows driver is not correct.	Select the correct printer port in the driver.
	The Ethernet IP, subnet mask, gateway is not configured properly.	Configure the IP, subnet mask and gateway.
No print on the label	Label or ribbon loaded not correctly.	Follow the instructions in loading the media or loading the ribbon.
	Ribbon run out.	Loading the ribbon.
Continuous feeding labels	The printer setting may go wrong.	Please do the initialization and gap/black mark calibration.
Paper Jam	Gap/black mark sensor sensitivity is not set properly (sensor sensitivity is not enough)	Calibrate the gap/black mark sensor.
	Make sure label size is set properly.	Set label size exactly as installed paper in the labeling software or program.
	Labels may be stuck inside the printer mechanism near the sensor area.	Remove the stuck label.
Poor Print Quality	Top cover is not closed properly.	Close the top cover completely and make sure the right side and left side levers are latched properly
	Check if supply is loaded correctly.	Reload the supply.
	Ribbon and media are incompatible.	Change the ribbon or label combination.
	Check if dust or adhesives are accumulated on the print head.	Clean the print head.
	Check if print density is set properly.	Adjust the print density and print speed.
	Check print head test pattern if head element is damaged.	Run printer self-test and check the print head test pattern if there is dot missing in the pattern.

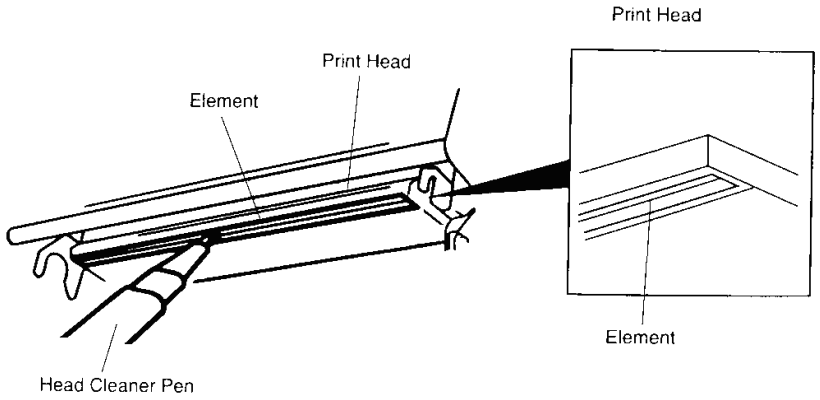
Maintenance

This session presents the clean tools and methods to maintain your printer.

1. Please use one of following material to clean the printer.

- Cotton swab (Head cleaner pen)
- Lint-free cloth
- Vacuum / Blower brush
- 100% ethanol

2. The cleaning process is described as following:

Printer Part	Method	Interval
Print Head	1. Always turn off the printer before cleaning the print head. 2. Allow the print head to cool for a minimum of one minute. 3. Use a cotton swab and 100% ethanol to clean the print head surface.	Clean the print head when changing a new label roll
		
Platen Roller	1. Turn the power off. 2. Rotate the platen roller and wipe it thoroughly with 100% ethanol and a cotton swab, or lint-free cloth.	Clean the platen roller when changing a new label roll
Tear Bar/Peel Bar	Use the lint-free cloth with 100% ethanol to wipe it.	As needed
Sensor	Compressed air or vacuum	Monthly
Exterior	Wipe it with water-dampened cloth	As needed
Interior	Brush or vacuum	As needed

Note:

- **Do not touch printer head by hand. If you touch it careless, please use ethanol to clean it.**
- **Please use 100% Ethenol. DO NOT use medical alcohol, which may damage the printer head.**
- **Regularly clean the print head and supply sensors once change a new ribbon to keep printer performance and extend printer life.**
- **Continuous printing will cause printer motor overheat. Printer will stop printing automatically about 10~15 minutes until motor is cooling down. Please don't turn off power when printer pauses or the data transfered to printer buffer will be lost.**
- **The maximum printing ratio per dot line is 15% for this printer. To print the full web black line, the maximum black line height is limited to 40 dots, which is 5mm for 203 DPI resolution printer and 3.3mm for 300 DPI resolution printer.**